GFP GROUND FAULT PROTECTOR

NOTE: SYMBOLS SHOWN IN THIS SCHEDULE ARE TYPICAL. NOT ALL ARE USED IN THIS PROJECT. MOUNTING HEIGHTS ARE TO THE CENTER OF THE DEVICE AND ARE TYPICAL.

SYMBOL DESCRIPTION

SYMBOL DESCRIPTION

W COMPLETE WITH

\* THIS IS A TYPICAL ABBREVIATION LIST. NOT ALL ABBREVIATIONS ARE USED ON THIS PROJECT.

**ELECTRICAL WIRING** 

ABBREVIATIONS										
FF	ABOVE FINISHED FLOOR	(D)	DEMOLISH/DELETE	GND	GROUND	OFOI	OWNER FURNISHED OWNER INSTALLED			
FP	ARC FAULT PROTECTOR	Е	EMERGENCY	GRC	GALVANIZED RIGID CONDUIT	PNL	PANEL			
IC	AMP INTERRUPTING CURRENT (SYMMETRICAL)	(EX)	EXISTING	IG	ISOLATED GROUND	(R)	RELOCATE			
L	ALUMINUM	EPO	EMERGENCY POWER OFF	MCB	MAIN CIRCUIT BREAKER	(RM)	REMOVE AND RETURN TO OWNER			
G	BELOW GRADE	EWC	ELECTRIC WATER COOLER	MCC	MOTOR CONTROL CENTER	TR	TAMPER RESISTANT			
	CONDUIT	EWH	ELECTRIC WATER HEATER	МН	MANHOLE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR			
FCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	(F)	FUTURE	MLO	MAIN LUGS ONLY	TYP	TYPICAL			
KT	CIRCUIT	FA	FIRE ALARM	(N)	NEW	UNO	UNLESS NOTED OTHERWISE			
0	CONDUIT ONLY	FLA	FULL LOAD AMPS	NIC	NOT IN CONTRACT	WP	WEATHER PROOF			
U	COPPER	GFI	GROUND FAULT INTERRUPTER	NL	NIGHT LIGHT	XMR	TRANSFORMER			

**ELECTRICAL SYMBOLS** 

LIGHTING CONTROL

### **ELECTRICAL SPECIFICATIONS**

AS NOTED

+46"

CEILING

+16"

+84"

+84"

SEE DETAIL

SEE DETAIL

CEILING

CEILING

IN DUCT

CEILING

CEILING

+16"

AS NOTED

AS NOTED

AS NOTED

AS NOTED

+46"

AS NOTED

AS NOTED

AS NOTED

AS NOTE

AS NOTED

DOOR JAMB

AS NOTED

+46"

AS NOTED

AS NOTED

AS NOTED

AS NOTED

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+46"

AS NOTED

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AS NOTED

DASHED SYMBOLS INDICATE EXISTING FIXTURE, EQUIPMENT, ETC

AUDIO / VIDEO

FIRE ALARM

SYMBOL DESCRIPTION

TV TELEVISION OUTLET

I SPEAKER

VOLUME CONTROL

MICROPHONE JACK

AUXILIARY JACK

INTERCOM STATION

FIRE ALARM MANUAL PULL STATION

FIRE ALARM HORN/STROBE

WP | FIRE ALARM HORN/STROBE WATERPROOF

SMOKE DETECTOR BATTERY-BACKED

SMOKE DETECTOR (ELEVATOR RECALL)

FIRE ALARM STROBE

SMOKE DETECTOR

DUCT SMOKE DETECTOR

HEAT DETECTOR - C02

GAS DETECTOR

DOOR HOLDER

PRESSURE SWITCH

CONTROL MODULE

MONITOR MODULE

FIRE/SMOKE DAMPER

FIRE ALARM RELAY

FIRE ALARM FLOW SWITCH

FIRE ALARM TAMPER SWITCH

FIRE ALARM FIREFIGHTER PHONE

FIRE ALARM GENERATOR ANNUNCIATOR

FIRE ALARM REMOTE ANNUNCIATOR PANEL

SECURITY SYSTEM OVERHEAD DOOR CONTACT

SECURITY SYSTEM KEYPAD ARM/DISARM

SECURITY SYSTEM DOOR ELECTRIC STRIKE

SECURITY SYSTEM MAGNETIC DOOR LOCK

SECURITY SYSTEM AREA MOTION SENSOR

SECURITY SYSTEM GLASS BREAK SENSOR

SECURITY SYSTEM DOOR ACCESS KEYPAD

SECURITY SYSTEM CARD READER

SECURITY SYSTEM CCTV CAMERA

DIGITAL VIDEO RECORDER

SECURITY SYSTEM PANEL

POWER SUPPLY LOW VOLTAGE

SECURITY SYSTEM CCTV MONITOR

REQUEST TO EXIT MOTION DETECTOR

SECURITY SYSTEM DOOR CONTACT

FIRE ALARM CONTROL PANEL

FIRE ALARM TRANSMISSION (MONITORING) DEVICE

SECURITY

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**Q**.

**(I)** 

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FACP

KP

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REX

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DVR

SERT

OFCI OWNER FURNISHED CONTRACTOR INSTALLED

FIRE ALARM HORN/STROBE WITH GUARD

WORK CONSISTS OF FURNISHING LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED FOR THE COMPLETE INSTALLATION OF ELECTRICAL WORK SHOWN IN THE CONTRACT DOCUMENTS AND SPECIFIED IN DIVISION 16.

INCLUDE ALL PARTS AND LABOR, WHICH ARE INCIDENTAL AND NECESSARY FOR A COMPLETE AND OPERABLE INSTALLATION EVEN THOUGH NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS. SUCH ITEMS INCLUDE NUTS, BOLTS, ANCHORS, BRACKETS, SLEEVES, OFFSETS IN CONDUIT,

REQUEST INSPECTIONS AS REQUIRED BY REGULATING AGENCIES AND/OR REGULATIONS, PAY ALL CHARGES FOR INSPECTIONS BY REGULATING AGENCIES OF INSTALLATIONS OF PLANS AND SPECIFICATIONS. INCLUDE STATE AND LOCAL SALES TAXES IN THE BID. KEEP ACCURATE

RECORDS OF THESE TAXES AND FURNISH SUCH RECORDS TO THE OWNER

MEET OR EXCEED ALL CURRENT APPLICABLE CODES, ORDINANCES AND REGULATIONS FOR ALL INSTALLATIONS. PROMPTLY NOTIFY THE ENGINEER, N WRITING. IF THE CONTRACT DOCUMENTS APPEAR TO CONFLICT WITH GOVERNING CODES AND REGULATIONS. CONTRACTOR ASSUMES ALL RESPONSIBILITY AND COSTS FOR CORRECTING NON-COMPLYING WORK

HIGHER QUALITY OF WORKMANSHIP AND MATERIALS INDICATED IN THE CONTRACT DOCUMENTS TAKES PRECEDENCE OVER THAT ALLOWED IN REFERENCED CODES AND STANDARDS.

INSTALLED WITHOUT NOTIFYING THE ENGINEER.

- THE TERMS DEFINED BELOW APPLY TO ALL WORK INCLUDED IN DIVISION 16. a. THE WORK - AS DEFINED IN THE 1997 AIA DOCUMENT A201: "THE TERM "WORK" MEANS THE CONSTRUCTION AND SERVICES REQUIRED BY THE CONTRACT DOCUMENTS WHETHER COMPLETED OR PARTIALLY COMPLETED, AND INCLUDES ALL OTHER LABOR, MATERIALS, EQUIPMENT AND SERVICES PROVIDED OR TO BE PROVIDED BY THE CONTRACTOR TO FULFILL THE CONTRACTORS OBLIGATIONS. THE WORK
- b. FURNISH TO OBTAIN IN NEW CONDITION READY FOR INSTALLATION

MAY CONSTITUTE THE WHOLE OR A PART OF THE PROJECT".

- c. INSTALL TO STORE, SET IN PLACE, CONNECT AND PLACE INTO OPERATION INTO THE WORK.
- d. PROVIDE TO FURNISH AND INSTALL.
- e. CONNECT TO BRING SERVICE TO THE EQUIPMENT AND MAKE FINAL ATTACHMENT INCLUDING NECESSARY SWITCHES, OUTLETS, BOXES, TERMINATIONS, ETC.
- CONDUIT INCLUDES IN ADDITION TO CONDUIT, ALL FITTINGS, PUL BOXES, HANGERS AND OTHER SUPPORTS AND ACCESSORIES RELATED
- g. CONCEALED HIDDEN FROM SIGHT IN CHASES. FURRED SPACES. SHAFTS, HUNG CEILINGS, EMBEDDED IN CONSTRUCTION, IN CRAWL
- h. EXPOSED NOT INSTALLED UNDERGROUND NOR CONCEALED AS DEFINED ABOVE.

THE DRAWINGS AND SPECIFICATIONS CONSTITUTE THE CONTRACT DOCUMENTS. ANY ITEM NOTED IN THE SPECIFICATION OR SHOWN ON THE DRAWINGS IS INCLUDED IN THE CONTRACT DOCUMENTS.

ALL ELECTRICAL DETAILS AND DRAWINGS ARE DIAGRAMMATIC, UNLESS

SPECIFICALLY NOTED. FIELD VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES, IN WRITING, PRIOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY PRECAUTIONS REQUIRED

WITH THIS WORK IN ACCORDANCE WITH THE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND OTHER GOVERNING AGENCIES.

DO NOT REMOVE OR DISTURB ANY ASBESTOS CONTAINING MATERIALS FROM THE PROJECT, IMMEDIATELY STOP WORK AND NOTIFY THE TENANT IF ASBESTOS CONTAINING MATERIALS ARE SUSPECTED. BEFORE SUBMITTING A PROPOSAL ON THE WORK CONTEMPLATED. EXAMINE

THE SITE OF THE PROPOSED WORK AND BECOME THOROUGHLY FAMILIAR. WITH EXISTING CONDITIONS AND LIMITATIONS. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF MISUNDERSTANDING AS TO THE AMOUNT OF WORK INVOLVED NOR BIDDERS LACK OF KNOWLEDGE OF EXISTING CONDITIONS WHICH COULD HAVE BEEN DISCOVERED OR REASONABLY ANTICIPATED PRIOR TO BIDDING.

CONDUITS, PIPES, DUCTS, LIGHTS, DEVICES, SPEAKERS, ETC., SHOWN ON THE DRAWINGS AS EXISTING HAVE BEEN BASED ON THE EXISTING PLANS AND MAY NOT BE INSTALLED AS ORIGINALLY SHOWN, IT IS THE CONTRACTORS RESPONSIBILITY TO VISIT THE SITE AND MAKE EXACT DETERMINATION OF THE EXISTENCE, LOCATION AND CONDITION OF SUCH FACILITIES PRIOR TO

CONSULT THE DRAWINGS AND SPECIFICATIONS OF MECHANICAL AND OTHER TRADES FOR CORRELATING INFORMATION AND LAY OUT WORK SO THAT IT WILL COORDINATE WITH OTHER TRADES. VERIFY DIMENSIONS AND CONDITIONS (I.E., FINISHED CEILING HEIGHTS, FOOTING AND FOUNDATION ELEVATIONS, BEAM DEPTHS, ETC). WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS THAT CANNOT BE RESOLVED, IN THE FIELD, BY AFFECTED TRADES. REPLACEMENT OF WORK DUE TO LACK OF COORDINATION AND FAILURE TO VERIFY EXISTING CONDITIONS WILL BE COMPLETED AT NO COST TO THE OWNER.

INSTALL ALL CONDUIT, CABLE TRAY, BUSDUCT, EQUIPMENT, ETC. ALLOWING PROPER CODE AND MAINTENANCE CLEARANCES AND TO AVOID BLOCKING PASSAGEWAYS AND ACCESS PANELS.

WHERE WORK MUST BE REPLACED DUE TO FAILURE OF THE CONTRACTOR TO VERIFY THE CONDITIONS EXISTING ON THE JOB, SUCH REPLACEMENT MUST BE ACCOMPLISHED AT NO COST TO THE OWNER. THIS APPLIES TO SHOP FABRICATED WORK AS WELL AS TO WORK FABRICATED IN PLACE.

THROUGHOUT THE COURSE OF THE WORK MINOR CHANGES AND ADJUSTMENTS TO THE INSTALLATION MAY BE REQUESTED BY THE ENGINEER. THE CONTRACTOR SHALL MAKE ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE OWNER. WHERE SUCH ADJUSTMENTS ARE NECESSARY TO THE PROPER INSTALLATION AND OPERATION WITHIN THE INTENT OF THE CONTRACT DOCUMENTS. THIS DOES NOT INCLUDE WORK ALREADY

OBTAIN EXACT LOCATION OF CONNECTION TO EQUIPMENT, FURNISHED BY OTHERS, FROM THE PERSON FURNISHING THE EQUIPMENT. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY AND WHAT IS CALLED FOR IN EITHER ONE IS AS BINDING AS IF CALLED FOR IN BOTH.

INCLUDE THE BETTER QUALITY, GREATER QUANTITY OR HIGHER COST FOR AN ITEM OR ARRANGEMENT WHERE A DISAGREEMENT EXISTS IN THE DRAWINGS AND SPECIFICATIONS.

GUARANTEE AND MAINTAIN THE STABILITY OF WORK AND MATERIALS AND KEEP SAME IN PERFECT REPAIR AND CONDITION FOR THE PERIOD OF ONE (1) YEAR AFTER THE FINAL COMPLETION OF THE WORK AS EVIDENCED BY ISSUANCE OF THE FINAL CERTIFICATE BY THE OWNER.

DEFECTS OF ANY KIND DUE TO FAULTY WORK OR MATERIALS APPEARING DURING THE ABOVE MENTIONED PERIOD MUST BE IMMEDIATELY MADE GOOD BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE ENTIRE SATISFACTION OF THE OWNER. INCLUDE DAMAGE TO THE FINISH OR THE BUILDING RESULTING FROM THE ORIGINAL DEFECT OR REPAIRS.

REPLACE ALL RECEPTACLES, SWITCHES, COVERPLATES, ETC. DAMAGED BY ANY CONTRACTOR DURING THE COURSE OF CONSTRUCTION.

MATERIALS FURNISHED FOR THE TEMPORARY LIGHT AND POWER SYSTEM REMAIN CONTRACTORS PROPERTY, REMOVE WHEN THERE IS NO LONGER ANY NEED FOR TEMPORARY LIGHT AND POWER.

COORDINATE/SCHEDULE ALL WORK WITH THE OWNER TO MINIMIZE ANY DISRUPTIONS. CONFINE ALL INTERRUPTIONS TO THE SMALLEST POSSIBLE AREA. PROVIDE TEMPORARY CONNECTIONS IF REQUIRED TO PROVIDE CONTINUITY OF SERVICE.

INSPECT ALL AREAS AFFECTED BY THE INTERRUPTIONS AND RETURN ALL AUTOMATICALLY CONTROLLED EQUIPMENT, ELECTRICALLY OPERATED EQUIPMENT TO THE SAME OPERATING CONDITION PRIOR TO THE

DO NOT DISTURB NORMAL USE OF THE FACILITY, EXCEPT WITHIN THE IMMEDIATE CONSTRUCTION AREA, KEEP WALKS, DRIVEWAYS, ENTRANCES ETC. FREE AND CLEAR OF EQUIPMENT, MATERIAL AND DEBRIS.

MINIMIZES CONGESTION AND IS APPROVED BY THE OWNER. PROVIDE NEW MATERIAL AND EQUIPMENT, UNLESS NOTED OTHERWISE. PROTECT EQUIPMENT AND MATERIAL FROM DAMAGE, DIRT AND THE

AND CURRENT NECA STANDARDS.

INSTALLATION.

STORE ALL EQUIPMENT AND MATERIAL IN A PLACE AND MANNER THAT

PROVIDE THE HIGHEST QUALITY WORKMANSHIP AND PERFORM ALL WORK ONLY BY SKILLED MECHANICS, INSTALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, INSTRUCTIONS

THE OWNER RESERVES THE RIGHT TO REJECT MATERIAL OR WORKMANSHIP NOT IN ACCORDANCE WITH THE SPECIFICATIONS, BEFORE OR AFTER

PERFORM ALL CUTTING AND PATCHING NECESSARY TO WORK, UNLESS SPECIFICALLY DELEGATED TO THE GENERAL CONTRACTOR, OBTAIN SPECIAL PERMISSION FROM THE LANDLORD BEFORE CUTTING STRUCTURAL MEMBERS OR FINISHED MATERIAL. PERFORM ALL PATCHING IN SUCH A MANNER AS TO LEAVE NO VISIBLE TRACE AND RETURN THE AREA AFFECTED TO THE CONDITION OF UNDISTURBED WORK. PERFORM AL PATCHING BY WORKERS EXPERIENCED, SKILLED, AND LICENSED FOR THE PARTICULAR TYPE OF WORK INVOLVED. INFERIOR WORK WILL NOT BE

PATCH ALL HOLES LEFT AS A RESULT OF DEMOLITION OF ELECTRICAL EQUIPMENT AND DEVICES.

PREVENT THE SPREAD OF DUST, DEBRIS, AND OTHER MATERIAL INTO ADJACENT AREAS.

REFINISH ALL ELECTRICAL EQUIPMENT DAMAGED DURING SHIPPING AND/OR INSTALLATION TO ITS ORIGINAL CONDITION. REMOVE ALL RUST; PRIME, AND PAINT PER MANUFACTURERS RECOMMENDATIONS FOR FINISH EQUAL TO

AFTER TESTS HAVE BEEN MADE AND ACCEPTED, CLEAN LIGHT FIXTURES, PANELS AND OTHER EQUIPMENT INSTALLED BY THE CONTRACTOR, LEAVING THE ENTIRE WORK AREA IN A CLEAN AND COMPLETE WORKING ORDER.

OPERATE EQUIPMENT AND SYSTEMS IN ALL THEIR OPERATING MODES, TO /ERIFY PROPER OPERATION, PRIOR TO FINAL INSPECTION AND OWNER INSTRUCTIONS. NOTIFY THE ENGINEER, IN WRITING, THAT ALL SYSTEMS HAVE BEEN TESTED AND ARE FUNCTIONING AND OPERATING PROPERLY.

CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ELECTRICAL EQUIPMENT OR MATERIALS UNTIL FINAL ACCEPTANCE OF THE ENTIRE PROJECT BY THE OWNER.

PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS, INCLUDING TELEPHONE AND DATA SYSTEMS, IN SERVICE DURING CONSTRUCTION, WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, USE PERSONNEL EXPERIENCED IN SUCH

EXISTING ELECTRICAL SERVICE: MAINTAIN EXISTING SYSTEM IN SERVICE DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS, NOTIFY AND OBTAIN PERMISSION FROM OWNER/ENGINEER AT LEAST 24 HOURS BEFORE PARTIALLY OR DISABLING SYSTEM, MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.

EXISTING TELEPHONE, DATA, CCTV & SECURITY SYSTEM MAINTAIN EXISTING SYSTEMS IN SERVICE.

DEMOLISH AND EXTEND EXISTING ELECTRICAL WORK UNDER AND THIS SECTION, AND AS INDICATED ON THE DRAWINGS. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE NEW CONSTRUCTION.

PROVIDE SUPPORTS FOR ALL EXISTING ELECTRICAL EQUIPMENT THAT WAS SUPPORTED PREVIOUSLY BY DEMOLISHED WALLS, FLOORS, CEILING OR OTHER STRUCTURES. PROVIDE NEW SUPPORTS FROM STRUCTURAL MEMBERS NOT SLATED FOR DEMOLITION, PRIOR TO ANY DEMOLITION.

DWNER RESERVES THE RIGHT OF FIRST REFUSAL TO OBTAIN MATERIAL SHOWN TO BE REMOVED LINDER THIS CONTRACT. ITEMS NOT RETAINED BY THE OWNER BECOME THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE PREMISES.

EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH EXISTING ELECTRICAL INSTALLATIONS, OR AS SPECIFIED. RELOCATE AND REROUTE CONDUIT AND WIRING AS REQUIRED FOR CONDUIT CONCEALED IN WALLS OR STRUCTURE BEING ALTERED AS PART OF THE REMODELING, MAINTAIN CONTINUITY TO ALL DEVICES IN AND DOWNSTREAM OF REMODELED WORK.

REROUTE EXISTING RACEWAY AND WIRING, WHICH IS EXPOSED DUE TO REMOVAL OF EXISTING CONSTRUCTION. CONCEAL NEW RACEWAY AND WIRING AND MAINTAIN OPERATION.

# SECTION 16050 - BASIC MATERIALS AND METHODS

ENCASE ALL CONDUCTORS IN A CONTINUOUS RACEWAY SYSTEM, PROVIDE PULL AND JUNCTION BOXES AS REQUIRED BY THE NEC. SIZE ALL RACEWAY PER THE NEC WITH OVERSIZED CONDUITS AS INDICATED.

PROVIDE JUNCTION BOXES OR GUTTER AT BRANCH PANEL AND ROUTE EMT CONDUIT INTO PANELBOARD

PROVIDE EXPANSION FITTINGS WHERE RACEWAY CROSSES BUILDING EXPANSION JOINTS.

RUN ALL EXPOSED CONDUIT IN A NEAT, WORKMANLIKE MANNER PARALLEL TO THE BUILDING LINES, TIGHT TO THE WALL AND CEILING SURFACES, AND FIRMLY SUPPORT WITH CONDUIT CLAMPS OR HANGERS. PROVIDE TWO (2) HOLE MOUNTING STRAPS, MINIMUM THREE (3) FEET ON CENTER, FOR ALL SURFACE CONDUIT MOUNTED ON WALLS LESS THAN SIX (6) FEET ABOVE FINISHED FLOOR. PLACE CONDUITS AT LEAST 8" AWAY FROM ALL HOT PIPING AND SURFACES INCLUDING DOMESTIC HOT WATER LINES.

PROVIDE GALVANIZED CODE GAUGE STEEL JUNCTION AND PULL BOXES WITH SCREW ON COVERS OF TYPE, SHAPE AND SIZE REQUIRED TO SUIT EACH INSTALLATION, PROVIDE GASKETING IN DAMP AND DUSTY

PROVIDE 4" BOXES THROUGHOUT. PROVIDE 3-1/2" DEEP BOXES WHERE INSTALLED IN MASONRY, 2-1/2" MINIMUM ELSEWHERE. VAPOR TIGHT GANG MUD OR TILE RING FOR SINGLE DEVICES.

COORDINATE THE LOCATION OF ALL OUTLETS WITH MECHANICAL DRAWINGS

BEFORE INSTALLATION. PROVIDE WIRE AND CABLE WITH INSULATION VOLTAGE RATING EQUAL TO OR GREATER THAN THE APPLIED SYSTEM VOLTAGE, PROVIDE SOLID OR STRANDED COPPER CONDUCTORS WITH TYPE THWN. THHN. OR XHHW INSULATION FOR NO. 12 AWG AND NO. 10 AWG CONDUCTORS. PROVIDE MINIMUM NO. 12 AWG CONDUCTOR SIZE, UNLESS NOTED OTHERWISE. USE THE MINIMUM CONDUCTOR SIZE WHEN NO SIZE IS INDICATED. ALL CONDUCTORS

SECTION 16501 - BUILDING LIGHTING

FROM CEILING SUPPORT SYSTEM

ELECTRICAL DETAILS

TO BE COLOR-CODED.

PROVIDE LIGHTING FIXTURES AS SCHEDULED C/W HOUSING LAMPS, LAMP HOLDERS, REFLECTORS, BALLASTS & WIRING.

FLUORESCENT LAMP BALLAST FOR T8 & T5 LAMPS SHALL BE ELECTRONIC CBM CERTIFIED W/ THD LESS THAN 20% RAPID START. SUPPORT ALL RECESSED LIGHTING FIXTURES W/ 4 # 12GA. WIRES INDEPENDENT

## DRAWING INDEX

LEVEL 2 AREA A LIGHTING PLAN ELECTRICAL SYMBOLS AND NOTES LEVEL 2 AREA B LIGHTING PLAN ELECTRICAL SITE PLAN PHOTOMETRIC SITE PLAN ONE-LINE DIAGRAM LEVEL 1 AREA A POWER PLAN ELECTRICAL SCHEDULES LEVEL 1 AREA B POWER PLAN ELECTRICAL SCHEDULES LEVEL 2 AREA A POWER PLAN ELECTRICAL SCHEDULES LEVEL 2 AREA B POWER PLAN ELECTRICAL SCHEDULES LEVEL 1 AREA A LIGHTING PLAN E6.1 ELECTRICAL DETAILS

E6.2

LEVEL 1 AREA B LIGHTING PLAN

#### **GENERAL NOTES**

- THE ELECTRICAL CONTRACTOR SHALL REVIEW AND COORDINATE WITH ARCHITECTURAL, CIVIL, STRUCTURAL MECHANICAL, PLUMBING AND OTHER DRAWINGS PRIOR TO BID.
- SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH THE SPECIFICATIONS IN A NEAT AND ORDERLY MANNER WITH TYPE AND MODEL NUMBERS INDICATED. SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO: LIGHTING FIXTURES. LAMPS, WIRING DEVICES, OCCUPANCY SENSORS, CONTACTORS, TIME CLOCKS, PHOTOCELLS, RELAYS, SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, SAFETY SWITCHES, MOTOR STARTERS, OVERCURRENT PROTECTION DEVICES, TRANSFORMERS, CONDUCTORS OVER 600 VOLTS AND ALL SPECIAL
- SYSTEMS SUCH AS FIRE ALARM, LIGHTING CONTROLS, SECURITY SYSTEMS, SOUND SYSTEMS FTC. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY. MANUFACTURES CATALOG NUMBERS ARE LISTED AS A BASIS OF DESIGN. ELECTRICAL CONTRACTOR SHALL
- CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY BUILDING PERMITS AND INSPECTION FEES.

SUBMIT PRODUCT INFORMATION THAT DEVIATES FROM ORIGINAL DESIGN AND SPECIFICATION.

- ALL IMPACT FEES ASSOCIATED WITH CITY, UTILITY OR SERVICE COMPANIES FOR BUT NOT LIMITED TO POWER, TELEPHONE, FIBER OPTIC & INTERNET SHALL BE THE RESPONSIBILITY OF THE OWNER.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE GENERAL CONTRACTOR TO PROVIDE AND INSTALL TEMPORARY POWER FOR PROJECT CONSTRUCTION AS REQUIRED. ALL ENERGY COSTS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
- DO NOT SCALE DRAWINGS VERIFY DIMENSIONS IN FIELD PRIOR TO MAKING ANY ROUGH-INS.
- ELECTRICAL CONTRACTOR SHALL REVIEW ALL ARCHITECTS ELEVATIONS, SECTIONS AND FLOOR PLANS PRIOR TO ROUGH IN OF ELECTRICAL DEVICE JUNCTION BOXES.
- CONSULT ARCHITECTS REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF LIGHTING FIXTURES, SPEAKERS,
- ELECTRICAL CONTRACTOR SHALL MEET WITH THE CEILING AND MECHANICAL CONTRACTORS TO COORDINATE LOCATIONS, CLEARANCES, CEILING TYPES AND ROUGH-IN REQUIREMENTS OF ALL LIGHTING FIXTURES PRIOR TO DUCT. PIPING AND CEILING INSTALLATIONS.
- . VERIFY EXACT LOCATION OF EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
- ELECTRICAL CONTRACTOR SHALL VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH-INS. CONSULT CONTRACT DOCUMENT DRAWINGS AND SHOP DRAWINGS TO VERIFY AND MAINTAIN
- ELECTRICAL ROOM DRAWINGS ARE FOR REFERENCE ONLY OF EQUIPMENT QUANTITIES. ELECTRICAL CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF ELECTRICAL ROOM SHOWING DIMENSIONS AND CLEARANCES OF ALL EQUIPMENT AND ELECTRICAL GEAR PROVIDED. COORDINATE LAYOUT WITH ONE-LINE
- . CONTRACTOR SHALL VERIFY ACTUAL ELECTRICAL LOADS FROM NAMEPLATE RATINGS OF EACH PIECE OF EQUIPMENT REQUIRING POWER. BRING ANY DISCREPANCIES TO THE ATTENTION OF THE PROJECT ENGINEER.
- 5. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER, PER INDUSTRY STANDARD AND TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
- 16. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES, STANDARDS AND ORDINANCES
- FINAL CONNECTIONS TO EQUIPMENT SHALL BE MADE AS PER MANUFACTURERS WRITTEN INSTRUCTIONS AND APPROVED WIRING DIAGRAMS AND DETAILS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
- 8. ALL EMPTY RACEWAY SYSTEMS SHALL HAVE A 200LB RATED PULL CORD INSTALLED AND SHALL BE IDENTIFIED AT EACH JUNCTION, PULL AND TERMINATION POINT, USING PERMANENT MARKER IN THE BOX. ID SHALL INDICATE INTENDED USE OF CONDUIT, ORIGINATION AND TERMINATION POINTS OF EACH INDIVIDUAL
- ). ALL PENETRATIONS OF FIRE RATED FLOORS, CEILING AND WALLS SHALL BE SEALED WITH UL LISTED AND RATED FIRE STOP MATERIAL TO MAINTAIN FIRE RATING OF ASSEMBLY.
- . ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY OR CONCRETE COLUMNS, BOND BEAMS OR GROUTED CELLS OF MASONRY WALLS ADJACENT TO OPENINGS WITHOUT COORDINATION WITH THE MASONRY CONTRACTOR.
- WIRE FOR GENERAL USE SHALL BE COPPER 75° C RATED. WIRING FOR HID FIXTURES WITHIN 3" OF FLUORESCENT BALLAST SHALL BE COPPER, MINIMUM 90° C RATED. CONDUCTOR SIZES INDICATED ARE FOR INSTALLATION IN A MAXIMUM 30° C AMBIENT TEMPERATURE ENVIRONMENT. CONDUCTOR AMPACITY SHALL BE DERATED FOR HIGHER AMBIENT INSTALLATIONS.
- . CONDUCTORS HAVE BEEN SIZED FOR VOLTAGE DROP AS PER PLANS AND DIRECT ROUTING. ANY DEVIATION IN CONDUIT ROUTING MAY INCREASE THE WIRE AND CONDUIT SIZE. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO INSURE PROPER OPERATING VOLTAGE ON ALL CIRCUITS BOTH INTERIOR AND EXTERIOR. THE VOLTAGE DROP SHALL NOT EXCEED 3% FOR BRANCH CIRCUITS AND 2% FOR FEEDERS FOR A TOTAL OF 5% COMBINED TOGETHER OF BRANCH AND FEEDER CIRCUITS TO THE FARTHEST OUTLET.
- 3. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL UTILITY METERING EQUIPMENT TO COMPLY WITH THE STANDARDS OF THE LOCAL OR PROJECT SPECIFIC POWER COMPANY.
- 24. VERIFY EXACT LOCATIONS OF ALL NEW AND EXISTING UNDERGROUND SITE UTILITIES, PIPING AND RACEWAY SYSTEMS PRIOR TO TRENCHING. A UTILITY LOCATING COMPANY SUCH AS "BLUE STAKE" OR EQUAL SHALL BE USED TO VERIFY AND MARK UTILITIES BEFORE TRENCHING. PROVIDE NECESSARY TRENCHING, BACKFILL EXCAVATION, SUPPORTS, SERVICE FEEDERS, (CONDUIT AND/OR WIRE), PULL BOXES, TRANSFORMER PADS, SAW CUTTING AND PATCHING, CONCRETE PAVING ETC, REQUIRED. BACKFILL TRENCHES TO 90% COMPACTION. PATCHING SHALL MATCH EXISTING SURROUNDING SURFACES, CONTRACTOR SHALL OBTAIN AND VERIFY UTILITY COMPANY DRAWINGS AND REQUIREMENTS FOR ALL SITE UTILITIES. ELECTRICAL CONTRACTOR SHALL ALSO COORDINATE ELECTRICAL RELATED UTILITIES WITH THE CIVIL, MECHANICAL, AND SITE EXCAVATION
- 5. PULLBOXES, CABINETS, ETC. MOUNTED ON THE EXTERIOR OF THE BUILDING SHALL BE WEATHERPROOF TYPE WITH HINGED GASKETED LOCKABLE COVERS SECURED WITH TAMPERPROOF SCREWS.
- 26. SPLICES IN EXTERIOR PULLBOXES AND MANHOLES SHALL BE MADE WATERPROOF USING "SCOTCAST" SPLICE KIT OR APPROVED EQUAL. SEAL ENDS OF CONDUITS AND DUCTS ENTERING BOXES WITH "DUCTSEAL" OR
- ELECTRICAL CONTRACTOR SHALL TEST AND VERIFY ALL SYSTEMS WITH PROJECT ENGINEER DURING FINAL INSPECTION TO INSURE PROPER OPERATION. IF TESTS RESULT IN DEFECT THE CONTRACTOR SHALL MAKE ANY CORRECTIONS NECESSARY AT NO ADDITIONAL COSTS TO THE OWNER.
- 28. PROVIDE RECORD DRAWINGS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

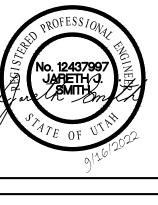
CONTRACTORS

2. THE CONTRACTOR SHALL GUARANTEE THE INSTALLATION AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP, WHICH MAY OCCUR UNDER NORMAL USAGE FOR A PERIOD OF ONE YEAR AFTER SUBSTANTIAL COMPLETION. DEFECTS SHALL BE PROMPTLY CORRECTED.

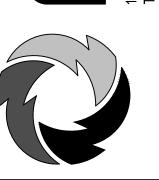


#### **ENGINEERING AND ELECTRICAL SERVICES DESIGN BUILD - COMMERCIAL - INDUSTRIAL**

THIS DRAWING EMBODIES IDEAS, DESIGN, ARRANGEMENTS, PLANS AND SPECIFICATIONS WHICH ARE PROPRIETARY TO ALDER ELECTRIC COMPANY, LLC AND WHICH WERE DESIGNED, CREATED, EVOLVED AND DEVELOPED FOR USE SOLELY BY ALDER ELECTRIC COMPANY, LLC IN CONNECTION WITH THIS SPECIFIED PROJECT. NO TRANSFER OF ANY RIGHTS HERETO IS INTENDED OF EFFECTED BY DELIVERY HEREOF, AND EXCEPT UPON THE WRITTEN PERMISSION OF ALDER ELECTRIC COMPANY, LLC, THIS DRAWING IS NOT TO BE DISCLOSED TO OTHERS, REPRODUCED OR COPIED IN WHOLE OR PART, OR USED IN FABRICATION CONSTRUCTION OF BUILDINGS, STRUCTURES, FOUNDATIONS OR ANY PORTION THEREOF, FOR OTHER THAN THIS SPECIFIED PROJECT BY ALDER ELECTRIC COMPANY, LLC. THIS IS NOT INTENDED TO BE A FULL REPRESENTATION OF THE ELECTRICAL SERVICES ON THE PROJECT AND CAN NOT BE VIEWED AS SUCH DUE TO THE DESIGN NATURE AND THE INTENTION THAT ALDER ELECTRIC COMPANY, LLC WILL BE THE ELECTRICAL CONTRACTOR ON THE PROJECT. THE ELECTRICAL DESIGN LIABILITY FOR THIS PROJECT IS ONLY ASSUMED UNDER THESE CONDITIONS AND IS VOID UNDER ANY OTHER CIRUMSTANCES WITHOUT PRIOR WRITTEN APPROVAL FROM ALDER ELECTRIC COMPANY LLC.



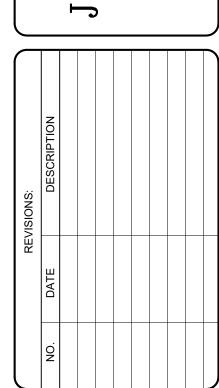




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11/10/2022 SEE DWG. SCALE..

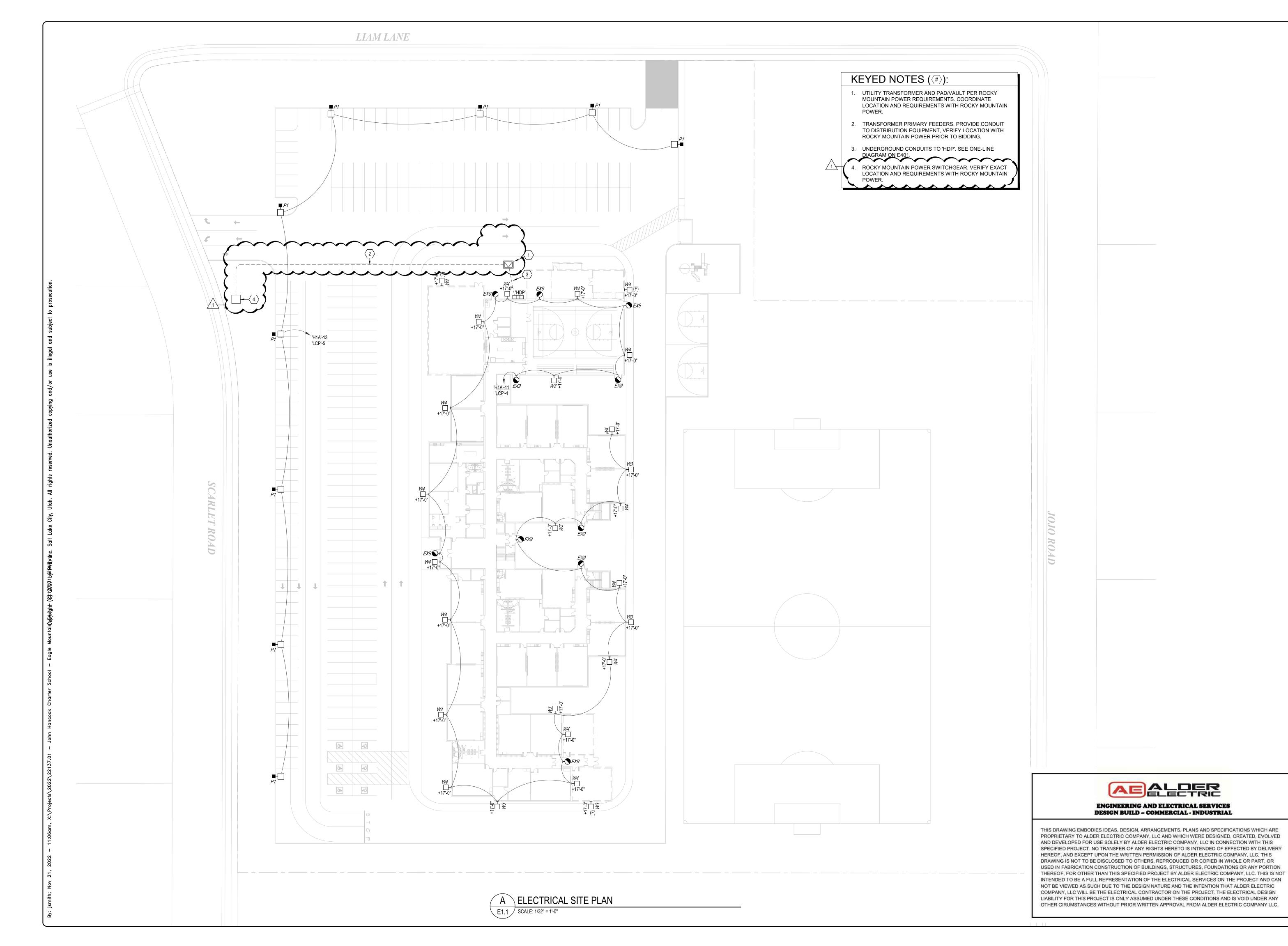
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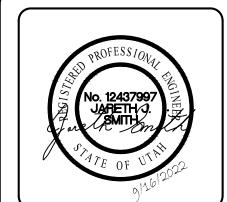
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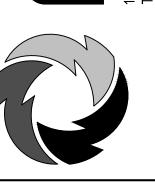
**ELECTRICAL SYMBOLS** AND NOTES

SHEET NO.









R SCHOOL SAD

JOHN HANCOCK
2890 N SC
EAGLE MOU

NO. DATE DESCRIPTION
1 11/21/2022 RMP COORDINATION

DRAWN....JJS CHECKED...JJS

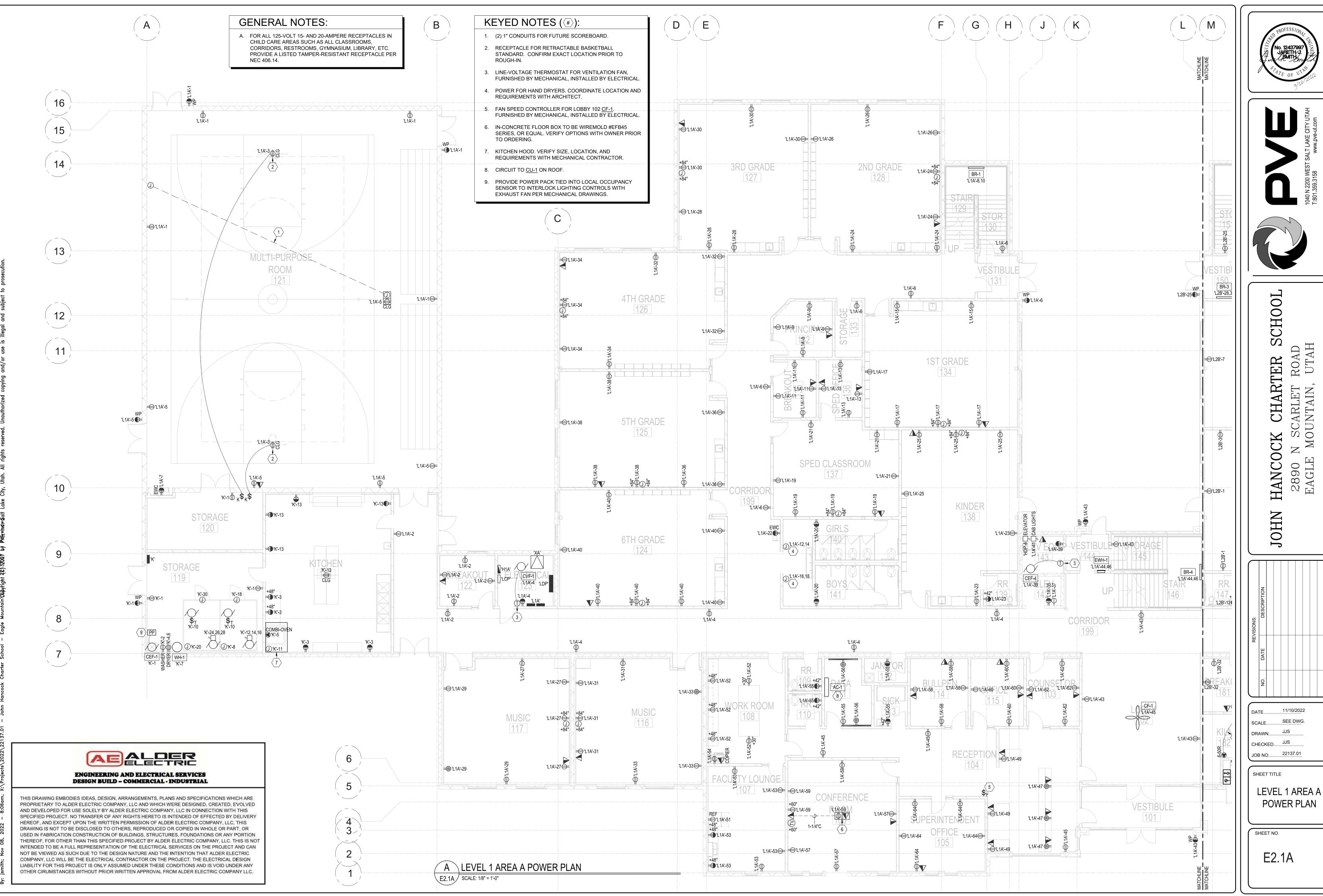
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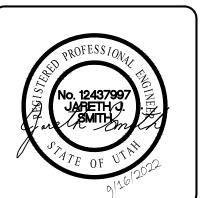
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ELECTRICAL SITE PLAN

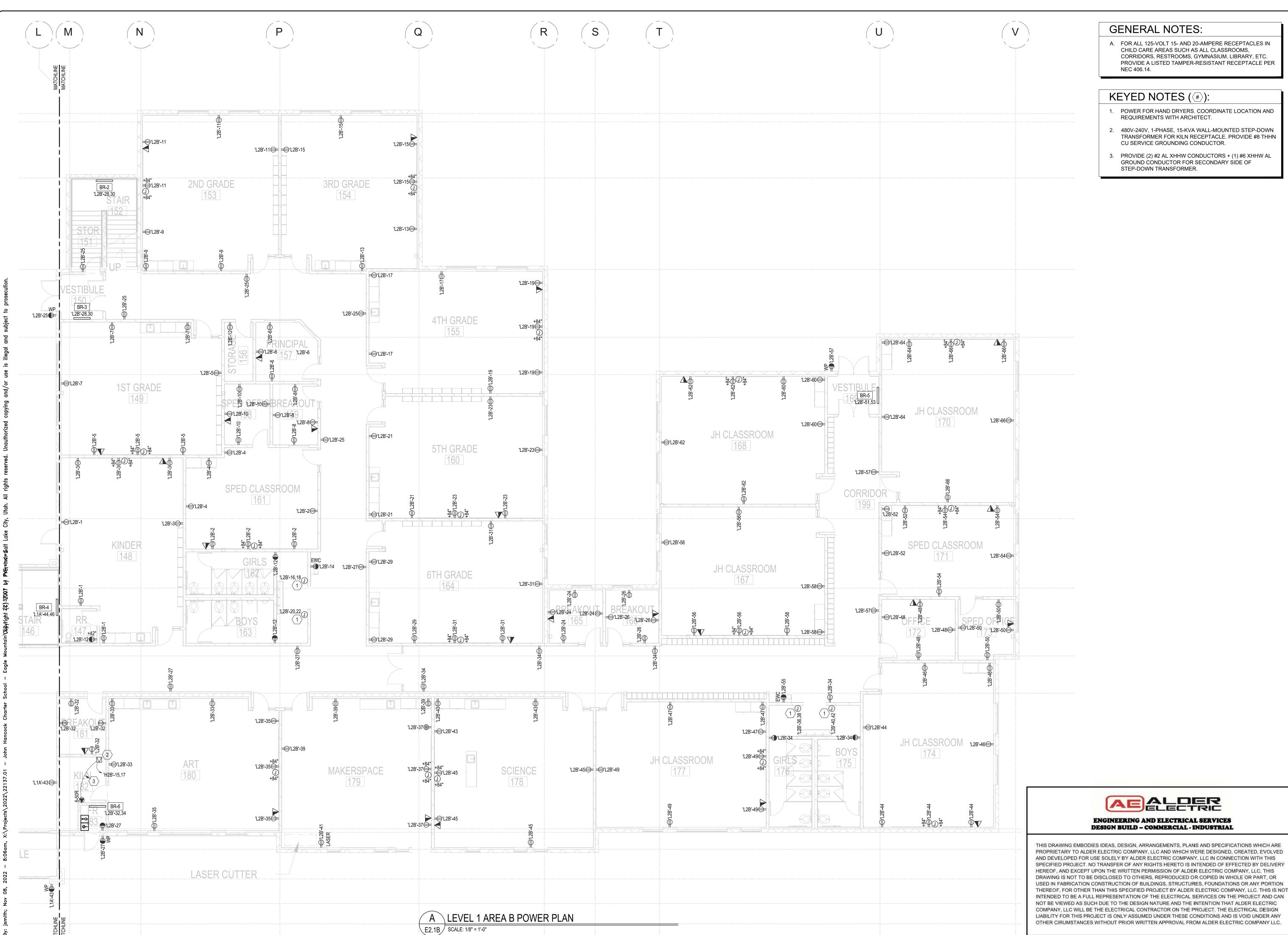
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**E**4 4









## **GENERAL NOTES:**

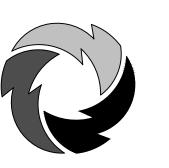
A. FOR ALL 125-VOLT 15- AND 20-AMPERE RECEPTACLES IN CHILD CARE AREAS SUCH AS ALL CLASSROOMS, CORRIDORS, RESTROOMS, GYMNASIUM, LIBRARY, ETC. PROVIDE A LISTED TAMPER-RESISTANT RECEPTACLE PER NEC 406.14.

# KEYED NOTES ((#)):

- 1. POWER FOR HAND DRYERS. COORDINATE LOCATION AND REQUIREMENTS WITH ARCHITECT.
- 2. 480V-240V, 1-PHASE, 15-KVA WALL-MOUNTED STEP-DOWN TRANSFORMER FOR KILN RECEPTACLE. PROVIDE #8 THHN CU SERVICE GROUNDING CONDUCTOR.
- 3. PROVIDE (2) #2 AL XHHW CONDUCTORS + (1) #6 XHHW AL GROUND CONDUCTOR FOR SECONDARY SIDE OF STEP-DOWN TRANSFORMER.



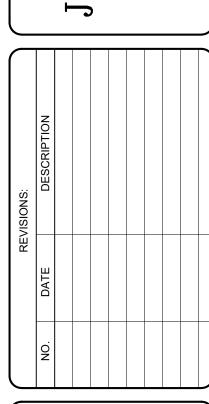




SCHOO ROAD UTAH CHARTER

HANCOCK 2890 N SC EAGLE MOU

JOHN



11/10/2022

SCALE.... DRAWN....

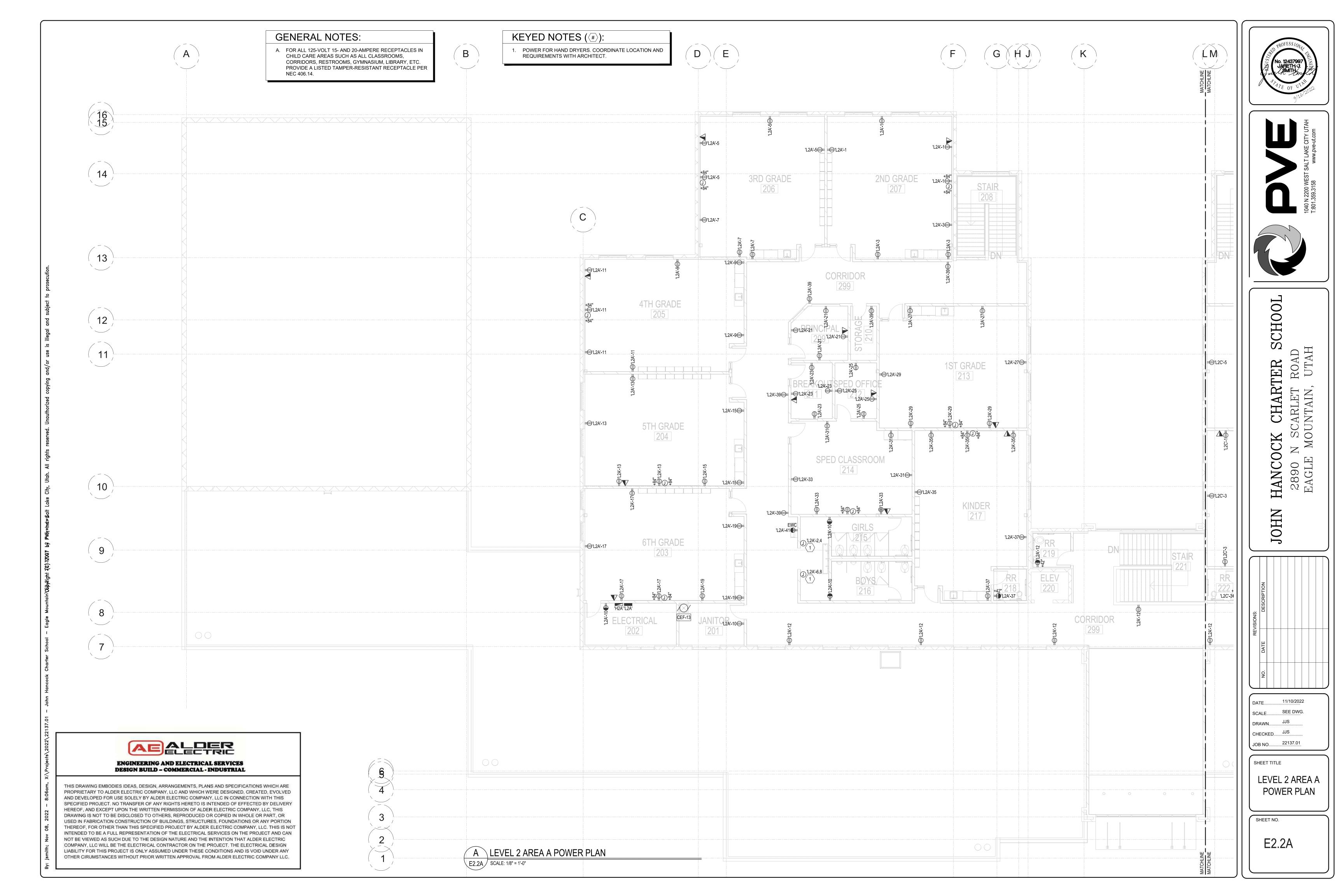
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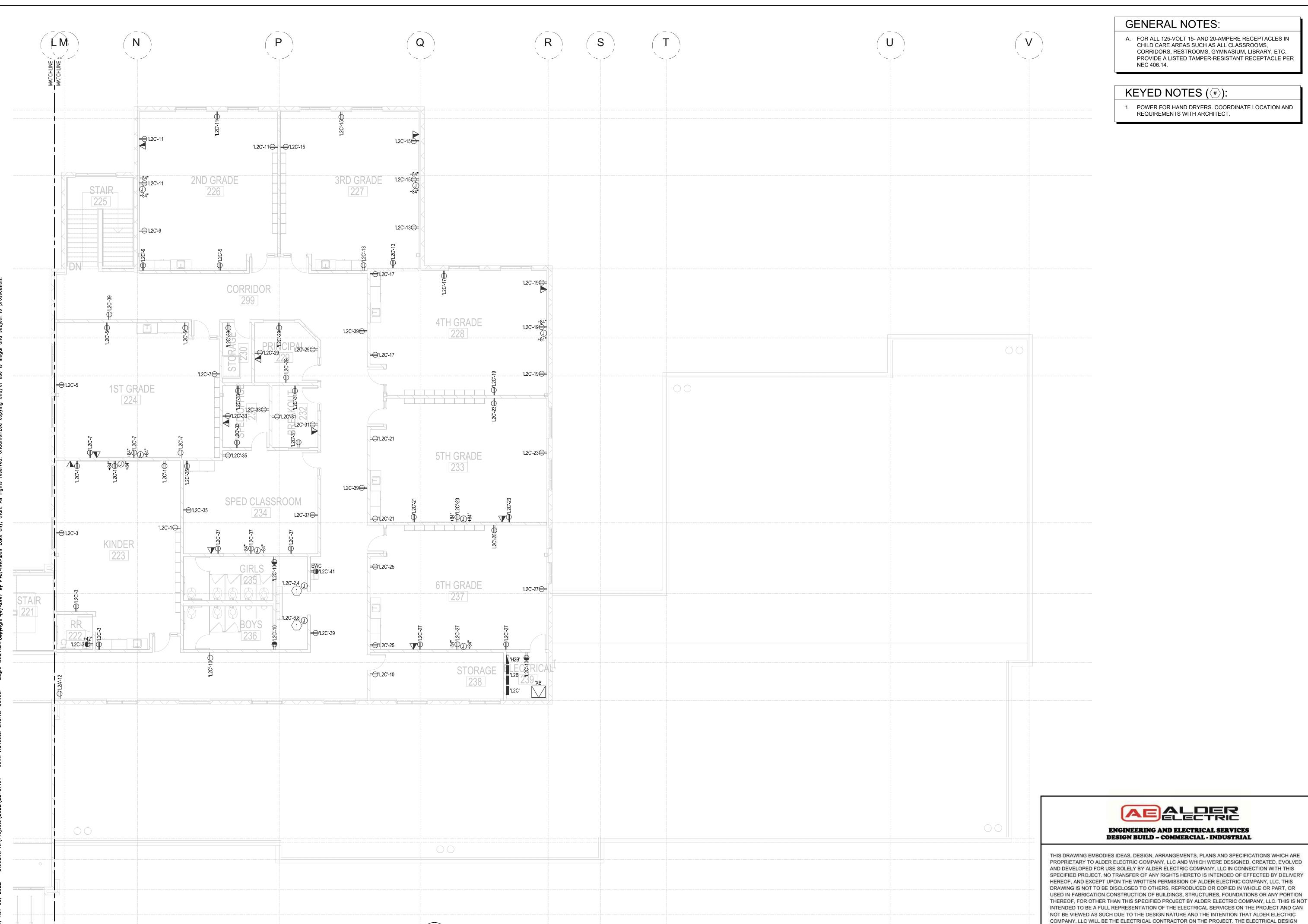
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LEVEL 1 AREA B POWER PLAN

SHEET NO.

E2.1B

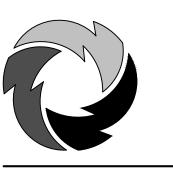




A LEVEL 2 AREA B POWER PLAN

E2.2B SCALE: 1/8" = 1'-0"





SCHOOL ROAD UTAH CHARTER HANCOCK 2890 N SC EAGLE MOU

OHN.

REVISIONS:	DESCRIPTION								
RE	DATE								
	NO.								

SCALE....

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SHEET TITLE

LEVEL 2 AREA B POWER PLAN

SHEET NO.

LIABILITY FOR THIS PROJECT IS ONLY ASSUMED UNDER THESE CONDITIONS AND IS VOID UNDER ANY OTHER CIRUMSTANCES WITHOUT PRIOR WRITTEN APPROVAL FROM ALDER ELECTRIC COMPANY LLC. E2.2B